

S/N 09/782498

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Wing-Cheong G. Lai et al.

Examiner: Tuan Quach

Serial No.: 09/782498

Group Art Unit: 2814

Filed: February 13, 2001

Docket No.: 303.261US3

Title: **SMALL GRAIN SIZE, CONFORMAL ALUMINUM INTERCONNECTS AND METHOD FOR THEIR FORMATION**



**AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111**

Commissioner for Patents  
Washington, D.C. 20231

Applicant has reviewed the Office Action mailed on November 20, 2002. Please amend the above-identified patent application as follows.

**IN THE CLAIMS**

Please substitute the claim set in the appendix entitled Clean Version of Pending Claims for the previously pending claim set. The substitute claim set is intended to reflect amendment of previously pending claims 17, 29, 37-39, and 45. The specific amendments to individual claims are detailed in the following marked up set of claims.

17. (Amended) An interconnect structure in an integrated circuit, comprising:  
a first layer of titanium nitride;  
an aluminum film;  
a second layer of titanium nitride between the first layer of titanium nitride and the aluminum film wherein the second layer of titanium nitride comprises a polycrystalline orientation that comprises a mixture of 1:1 of <111> and <200> oriented grains that are effective for forming an aluminum film of small grain size.

29. (Amended) An interconnect structure in an interconnect via defined by a bottom surface, a top surface, and sidewalls, comprising:  
a first layer of titanium nitride formed on the sidewalls and the bottom surface defining the interconnect via;  
a second layer of titanium nitride supported by the first layer of titanium nitride; and

RECEIVED  
FEB 27 2003  
TECHNOLOGY CENTER 2800  
RECEIVED  
APR - 8 2003  
TECHNOLOGY CENTER 2800